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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------|
| 10/727,026 | 12/02/2003 | Andrew J. Ouderkirk | 59417US002 | 4456 |
| 32692 7590 04/02/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427 | | | EXAMINER QUARTERMAN, KEVIN J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2879 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | NOTIFICATION DATE | DELIVERY MODE | |
| 3 MONTHS | | 04/02/2007 | ELECTRONIC | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary

Application No.

10/727,026

Applicant(s)

OUDERKIRK ET AL.

Examiner

Kevin Quarterman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-34 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) 34 and 36-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7 and 12-17 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 18-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>1006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment and remarks received 20 January 2007 have been entered and overcome the objection to claim 16 recited in the previous office action mailed 31 July 2006.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3-6 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 6,155,699) in view of Benson (US 5,831,375).

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5. Regarding independent claim 1, Figure 2 of Miller shows a light source (26) comprising an LED (12) that emits excitation light; a layer of phosphor material (36) to receive the excitation light, the phosphor material emitting visible light when illuminated with the excitation light; and a first non-planar multilayer reflector (30) being positioned to reflect the excitation light onto the phosphor material.

6. Miller teaches the limitations of independent claim 1 discussed above but fails to exemplify the first non-planar flexible multilayer reflector comprising a polymeric material.

7. Benson teaches that it is known in the art to provide the light sources with multilayer reflectors comprising polymeric material (col. 6, ln. 33-51) for reflecting and/or polarizing light emitted by the lamp (Abstract).

8. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the light source of Miller with a non-planar flexible multilayer reflector comprising polymeric material, as taught by Benson, for reflecting light onto the phosphor material.

9. Regarding claim 3, Benson discloses the multilayer reflector comprising alternating layers (Fig. 1b) of a first and second thermoplastic polymer and wherein at least some of the layers are birefringent (col. 6, ln. 33-53).

10. Regarding claim 4, Miller discloses the excitation light comprising UV light (col. 5, ln. 21-24).

11. Regarding claim 5, Figure 2 of Miller shows the first non-planar multilayer reflector (30) being concave.

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12. Regarding claim 6, Figure 2 of Miller shows the first non-planar multilayer reflector (30) being hemispherically concave.

13. Regarding claim 12, Benson discloses a polymeric material that resists degradation when exposed to UV light (col. 6, ln. 54-65).

14. Regarding claim 13, Benson discloses a multilayer reflector that is substantially free of inorganic materials (col. 6, ln. 54-65).

15. Regarding claim 14, Miller discloses the layer of phosphor material comprising particles of phosphor material dispersed in a binder (col. 5, ln. 24-26).

16. Claims 1, 3-7 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNulty (US 6,686,676) in view of Benson (US 5,831,375).

17. Regarding independent claim 1, Figure 5 of McNulty shows a light source (10) comprising an LED (20) that emits excitation light; a layer of phosphor material (26) positioned to receive the excitation light, the phosphor material emitting visible light when illuminated with the excitation light (col. 4, ln. 40-44); a first non-planar multilayer reflector (70) that reflects the excitation light and transmits visible light, the non-planar flexible multilayer reflector being positioned to reflect the excitation light onto the phosphor material.

18. McNulty teaches the limitations of independent claim 1 discussed above but fails to exemplify the first non-planar flexible multilayer reflector comprising a polymeric material.

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19. Benson teaches that it is known in the art to provide the light sources with multilayer reflectors comprising polymeric material (col. 6, ln. 33-51) for reflecting and/or polarizing light emitted by the lamp (Abstract).

20. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the light source of McNulty with a non-planar flexible multilayer reflector comprising polymeric material, as taught by Benson, for reflecting light onto the phosphor material.

21. Regarding claim 3, Benson discloses the multilayer reflector comprising alternating layers (Fig. 1b) of a first and second thermoplastic polymer and wherein at least some of the layers are birefringent (col. 6, ln. 33-53).

22. Regarding claim 4, McNulty discloses the excitation light comprising UV light (col. 4, ln. 41).

23. Regarding claim 5, Figure 5 of McNulty shows the non-planar multilayer reflector as a concave flexible multilayer reflector.

24. Regarding claim 6, Figure 5 of McNulty shows the non-planar multilayer reflector as a hemispherically concave.

25. Regarding claim 7, Figure 5 of McNulty shows the layer of phosphor material disposed between the LED and the non-planar multilayer reflector.

26. Regarding claim 12, Benson discloses a polymeric material that resists degradation when exposed to UV light (col. 6, ln. 54-65).

27. Regarding claim 13, Benson discloses a multilayer reflector that is substantially free of inorganic materials (col. 6, ln. 54-65).

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28. Regarding claim 14, McNulty discloses the layer of phosphor material comprising particles of phosphor material dispersed in a binder (col. 4, ln. 16-22).

29. Regarding claim 15, Figure 5 of McNulty shows the layer of phosphor material being discontinuous comprising a plurality of distinct regions.

30. Regarding claim 16, McNulty discloses each region having an area of less than 10000 microns² (col. 5, 39-41).

31. Regarding claim 17, McNulty discloses the regions comprising a first region that emits red light, a second region that emits green light, and a third region that emits blue light when illuminated with the excitation light (col. 4, ln. 11-16).

Allowable Subject Matter

32. Claims 8-11 and 18-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

33. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 8, the prior art of record neither shows or suggests a light source comprising, in addition to other limitations of the claim, a non-planar multilayer reflector having a non-uniform thickness. Due to their dependency upon claim 8, claims 9-11 are also allowable.

34. Regarding claim 18, the prior art of record neither shows or suggest a light source comprising, in addition to other limitations of the claim, a second multilayer reflector disposed between the LED and the phosphor material. Due to their dependency upon claim 18, claims 19-33.

Response to Arguments

35. Applicant's arguments received 20 January 2007 have been fully considered but they are not persuasive.

36. In response to applicant's argument that neither Miller nor Benson teach the non-planar multilayer reflector reflecting the excitation light and transmitting visible light, the Examiner notes that apparatus claims must be structurally distinguishable from the prior art (MPEP § 2114). When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (MPEP § 2112.01). Since the combination of Miller and Benson teaches each of the claimed structural limitations of the claim, the Examiner holds that the non-planar multilayer reflector of Miller and Benson is capable of reflecting excitation light and transmitting visible light as recited in independent claim 1.

37. In response to applicant's argument that Miller and Benson are directed to very different subject matter, the Examiner respectfully disagrees. Miller is directed to an LED-type light source, while Benson is directed to an electroluminescent lamp-type light source. Thus, the Examiner holds that Miller and Benson are both directed to light sources.

38. In response to applicant's argument that Benson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case,

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Benson is in the field of electroluminescent lamps that may be used as a light source for LCDs or other applications. Since the instant case is also in the field of light sources, the Examiner holds that Benson is indeed analogous art.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ouderkirk (US 2003/0165060) discloses a light fixture having a multilayer polymeric film.

40. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

41. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Contact Information

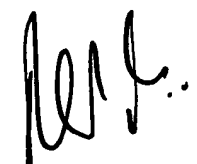
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Quarterman
Examiner
Art Unit 2879

kq 
23 March 2007


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